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VARIOUS.

The Sevres Mosaic Works.

These works are about to be opened to the public. The art of mosaic is young in France. At Rome, where it has long been used in the reproduction of the works of old masters, no less than 10,000 different shades of enamel are kept. At the workshops in Sèvres, which are not so developed as those in Rome, there are shelves and drawers fixed parallel to the walls. These drawers contain five or six thousand tiny cubes of enamel or coloured glass, ranged according to tint. The pattern, usually a painting, is placed before the artist, who works in a square of cement, in which he lays his cubes in shades corresponding to the design furnished him. The Roman artist works on the same plan, but instead of whole blocks of cement, and enamels a centimetre square, they use microscopically small tubes, with which they have to work hard to fill up a square centimetre a day. The design is copied with a blacklead pencil on a surface prepared with white plaster; this is removed little by little, and its place supplied with cement, in which the fragments of cut enamel are placed one by one. The finer the shading, the smaller the cubes of enamel. *Iron.*

Wood Paving in Paris.

An experimental section of one of the principal streets in Paris is to be laid with wood paving shortly. Instead of being laid as in London, on creosoted boards, and filled with gravel and pitch, the wood blocks will be laid in sand, and jointed with sand or hydraulic cement.

A Vienna Exhibition in 1877.

An exhibition of objects of art and industry will be held in Vienna, under the auspices of the Vienna Association for Commerce and Trade, on April 1st, 1877, closing April 14th. Mr. J. C. Ackermann, publisher of the *Illustrirte Gewerbe-Zeitung*, Vienna, Magdalenenstr. 24, will furnish information concerning it.

Black Varnish.

A black varnish, composed as follows, is found useful for metal articles:—

44 lbs. of pitch or tar, and 11 lbs. of india-rubber or gum elastic are boiled till the whole is reduced to about 33 lbs. When it is required for use, it is diluted with water, and well stirred. *El Porvenir de la Industria.*

Inoxidisable Britannia Metal.

M. Marlie gives the following formula for the production of a Britannia metal which does not tarnish: — Iron, 10 parts; nickel, 35; yellow copper, 25; tin, 20; and zinc, 10. The substances being fused and mixed, the mixture is heated to white heat, and cooled in a mixture containing 60 parts of sulphuric acid, 10 of nitric acid, 5 of hydrochloric acid, and 25 of water. The alloy should remain in the acid only a very short time, otherwise it is evident it would be rapidly dissolved. *Art Dentaire.*

Process for Cleaning Silver Articles, Plate, Jewellery, &c.

Chalk, rotten-stone, and bone-powder, which are usually employed in households, have the inconvenience of requiring great labour, and scratching the articles cleaned. A convenient and expeditious mode of cleaning perfectly, consists in well rubbing the objects with a piece of linen impregnated with pure and concentrated liquid ammonia. It is necessary for the cleaner to stand in a current of air, and avoid wetting the fingers with the liquid ammonia. The articles are afterwards to be rubbed with a dry linen cloth. The method has been tried with success by M. J. J. Leroy, of Brussels. *Industrie Progressive.*

Bell-Metal.

A new alloy for bell-metal is proposed, which does not tarnish, is less likely to crack, gives a better sound, and is much lighter in weight than the alloy usually employed for the purpose. It is prepared as follows: Nickel, 1 lb., and copper 6 lb., are melted and cooled. Add zinc 1 lb., aluminium $^1/_2$ oz. Melt and cool. Melt again, and finally add $^1/_2$ oz. quicksilver and 6 lb. melted copper.

Iron of Antiquity.

The oldest pieces of iron (wrought iron) now known are probably the sickle blade found by Belzoni under the base of a sphinx at Karnac, near Thebes; the blade found by Colonel Vyse embedded in the masonry of the great pyramid; the portion of a cross-cut saw exhumed at Nimroud by Mr. Layard, all of which are now in the British Museum. A wrought bar of Damascus steel was presented by King Porus to Alexander the Great, and the razor steel of China for many centuries has surpassed all European steel in temper and durability of edge. The Hindoos appear to have made wrought iron directly from the ore, without passing it through the furnace, from time immemorial, and elaborately wrought masses of iron are still found in India which date from the early centuries of the Christian era.

Phosphor Bronze.

An American paper says that the exhibit made by the Phosphor Bronze Company, of London, consists of a considerable variety of bearings und working parts of machinery, wrenches, scissors &c., the most of which have been subjected to tests appropriate to them, and the results shown. Among these are a pair of worms, or endless screws, which have been run in articulation with toothed »worms wheels« for eighteen months in a place, and under circumstances such as had, previous to the adoption of this material, destroyed them when made of brass in twelve days; and these specimens showed but slight signs of wear after such an ordeal. A large shaft-bearing forming a step, which had suffered more than ordinary pressure on its collar, and which had been repeatedly replaced when made of brass, after three weeks' service, had suffered a diminution in the thickness of collar scarcely appreciable after eight months' use, the mills running night and day. An eccentric-strap which had run eighteen months was reduced in thickness at the crown $^1/_4$ inch, where the ordinary gun-metal straps had been replaced every three months. Perhaps the most striking example given of the ability of this alloy to resist wear and tear is that of an hydraulic pump plunger. This plunger had been at work for 572 days at the rate of sixty strokes per minute, under a pressure of three tons to the square inch, and showed no signs of wear; while lying by its side is a hardened steel plunger, which had been subjected to the same work during sixty days, and was worn down to such an extent as to be of no further use. Specimens of wire made from this alloy are also shown, with tabulated data of experimental tests made with it, which establish that, while it is more ductile than copper, it exceeds in tenacity some of the strongest of steels.